

WHAT IS CLAIMED IS:

1. A method of producing a photovoltaic element comprising the steps of:

immersing in an electrolytic solution a  
5 photovoltaic element comprising a back surface reflecting layer, a semiconductor layer and a transparent electrode layer successively stacked on a substrate;

applying a forward voltage to the photovoltaic  
10 element to effect an electrolytic treatment to reduce the transparent electrode layer in a short-circuit portion of the photovoltaic element, thereby selectively removing a short-circuit current path in the photovoltaic element due to a defect,

15 wherein a voltage gradient when the forward voltage applied to the photovoltaic element is caused to drop to 0 V or a such forward voltage as to effect no reduction reaction of the transparent electrode layer is -15 V/s to -0.1 V/s.

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2. The method of producing a photovoltaic element according to claim 1, wherein the time period during which the forward voltage is caused to drop is 0.3 second or more.

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3. The method of producing a photovoltaic element according to claim 1, wherein the forward

voltage is not less than the open circuit voltage of the photovoltaic element.

4. The method of producing a photovoltaic  
5 element according to claim 1, wherein the applied  
voltage is in a form of a trapezoidal wave that  
alternates between the forward voltage not less than  
the open circuit voltage of the photovoltaic element  
and 0 V or such a forward voltage as to effect no  
10 reduction reaction of the transparent electrode layer.

5. The method of producing a photovoltaic  
element according to claim 1, wherein the applied  
voltage is in a form of a sawtooth wave that  
15 alternates between the forward voltage not less than  
the open circuit voltage of the photovoltaic element  
and 0 V or such a forward voltage as to effect no  
reduction reaction of the transparent electrode layer  
does not occur.

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6. The method of producing a photovoltaic  
element according to claim 1, wherein the applied  
voltage is applied a plural number of times.

25 7. The method of producing a photovoltaic  
element according to claim 1, wherein the  
photovoltaic element is cleaned with water and dried

after the electrolytic treatment.

8. The method of producing a photovoltaic element according to claim 1, wherein the electrical  
5 conductivity of the electrolytic solution is 20 to 100 mS/cm.

9. The method of producing a photovoltaic element according to claim 1, wherein the temperature  
10 of the electrolytic solution is within the temperature range of 20°C to 80°C.

10. The method of producing a photovoltaic element according to claim 1, wherein the  
15 photovoltaic element is a thin-film solar cell.